

500987
(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



06 JUN 2004

(43) International Publication Date
17 July 2003 (17.07.2003)

PCT

(10) International Publication Number
WO 03/057001 A2

- (51) International Patent Classification⁷: **A61B**
- (21) International Application Number: PCT/IL03/00016
- (22) International Filing Date: 5 January 2003 (05.01.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/344,803 7 January 2002 (07.01.2002) US
60/361,091 1 March 2002 (01.03.2002) US
- (71) Applicant (*for all designated States except US*): **MED-SON LTD.** [IL/IL]; Pekeris Street 4, 76702 Rehovot (IL).

(72) Inventors; and
(75) Inventors/Applicants (*for US only*): **SELA, Natan** [IL/IL]; 4 Pekeris St., 76702 Rehovot (IL). **BUKSHPAN, Shmuel** [IL/IL]; Pekeris Street 4, 76702 Rehovot (IL). **COHEN, Lior** [IL/IL]; 4 Pekeris St., 76702 Rehovot (IL). **KARDOSH, Michael** [IL/IL]; 4 Pekeris St., Rehovot 76702 (IL).

(74) Agent: **FRIEDMAN, Mark, M.**; Beit Samueloff, Haomanim Street 7, 67897 Tel Aviv (IL).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *without international search report and to be republished upon receipt of that report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: A SYSTEM AND METHOD OF MAPPING IRREGULARITIES OF HARD TISSUE

(57) Abstract: A system and method of mapping irregularities of hard tissue. The method includes repeatedly transmitting ultrasonic energy towards the hard tissue at a first angle of incidence, registering the origin of transmission if an echo-reflection the hard tissue is received, defining the origin of transmission in six degrees of freedom, calculating position co-ordinates for a point causing the echo-reflection and changing the origin of transmission. The method further includes compiling position co-ordinates to generate a map of the irregularities in the surface of the hard tissue. The system includes at least one ultrasonic transducer, a central processing unit and a position locator and adjustment mechanism operably connectable and configured to accomplish the disclosed method.

WO 03/057001 A2